## WHAT IS CLAIMED IS

1. A compound of the formula [I]

2. A production method of a compound of the formula [I]

which comprises converting 4-bromofluorobenzene to 4-fluorophenylmagnesium bromide, and reacting the 4-fluorophenylmagnesium bromide with 2,4-dimethylbenzaldehyde.

10 3. A production method of a compound of the formula [II]

which comprises oxidizing a compound of the formula [I]

4. A production method of 1,3-dimethyl-4-(4'-fluorobenzoyl)benzene, which comprises subjecting m-xylene as a starting material and solvent to Friedel-Crafts reaction with 4-

## fluorobenzoyl halide.

5. A production method of a compound of the formula [II]

- which comprises subjecting m-xylene as a starting material and solvent to Friedel-Crafts reaction with 4-fluorobenzoyl halide to give 1,3-dimethyl-4-(4'-fluorobenzoyl)benzene and oxidizing said 1,3-dimethyl-4-(4'-fluorobenzoyl)benzene.
- 10 6. A production method of a compound of the formula [II]

which comprises subjecting 2,4-dimethylbenzoyl halide to Friedel-Crafts reaction with fluorobenzene to give 1,3-dimethyl-4-(4'-fluorobenzoyl)benzene and oxidizing said 1,3-dimethyl-4-(4'-fluorobenzoyl)benzene.

7. A production method of a compound of the formula [II]

which comprises subjecting trimellitic anhydride to Friedel-Crafts reaction with fluorobenzene in a dichloro-substituted or trichloro-substituted benzene solvent.

## 8. A production method of a compound of the formula [III]

which comprises subjecting a compound of the formula [II]

HOOC F

to reduction and cyclization.

## 9. A production method of a compound of the formula [III]

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which comprises subjecting trimellitic anhydride to Friedel-Crafts reaction with fluorobenzene to give a mixture of a compound of the formula [II]

15 and a compound of the formula [IV]



which is an isomer thereof, subjecting the mixture to reduction and cyclization, and isolating the resulting compound.

- 5 10. The production method of Claim 9, wherein the reaction solvent is dichloro-substituted or trichloro-substituted benzene.
  - 11. The production method of Claim 9 or Claim 10, wherein the reduction is carried out using sodium borohydride.
  - 12. The production method of Claim 9 or Claim 10, further comprising the use of a Lewis acid or dialkyl sulfate as a catalyst for the reduction.
- 13. The production method of Claim 12, wherein the catalyst is sulfuric acid, dimethyl sulfate, diethyl sulfate or boron trifluoride.
- 14. The production method of Claim 9 or Claim 10, wherein the cyclization is carried out using an acid catalyst.
  - 15. The production method of Claim 14, wherein the acid catalyst is an inorganic acid.
- 25 16. The production method of Claim 15, wherein the inorganic acid is hydrochloric acid, sulfuric acid or phosphoric acid.
  - 17. A production method of a compound of the formula [V]

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which comprises oxidizing a compound of the formula [III]

with manganese dioxide.

18. A production method of citalogram represented by the formula [A]

which comprises reacting a compound of the formula [VI]

with 3-(dimethylamino)propyl chloride in the presence of a condensing agent and at least one member selected from N,N,N',N'-tetramethylethylenediamine and 1,3-dimethyl-2-imidazolidinone.

19. The production method of Claim 18, wherein the compound of the formula [VI] is obtained by subjecting a compound of the formula [V]

successively to oximation and dehydration reaction.

5 20. The production method of Claim 18 or Claim 19, wherein the condensing agent is sodium hydride.